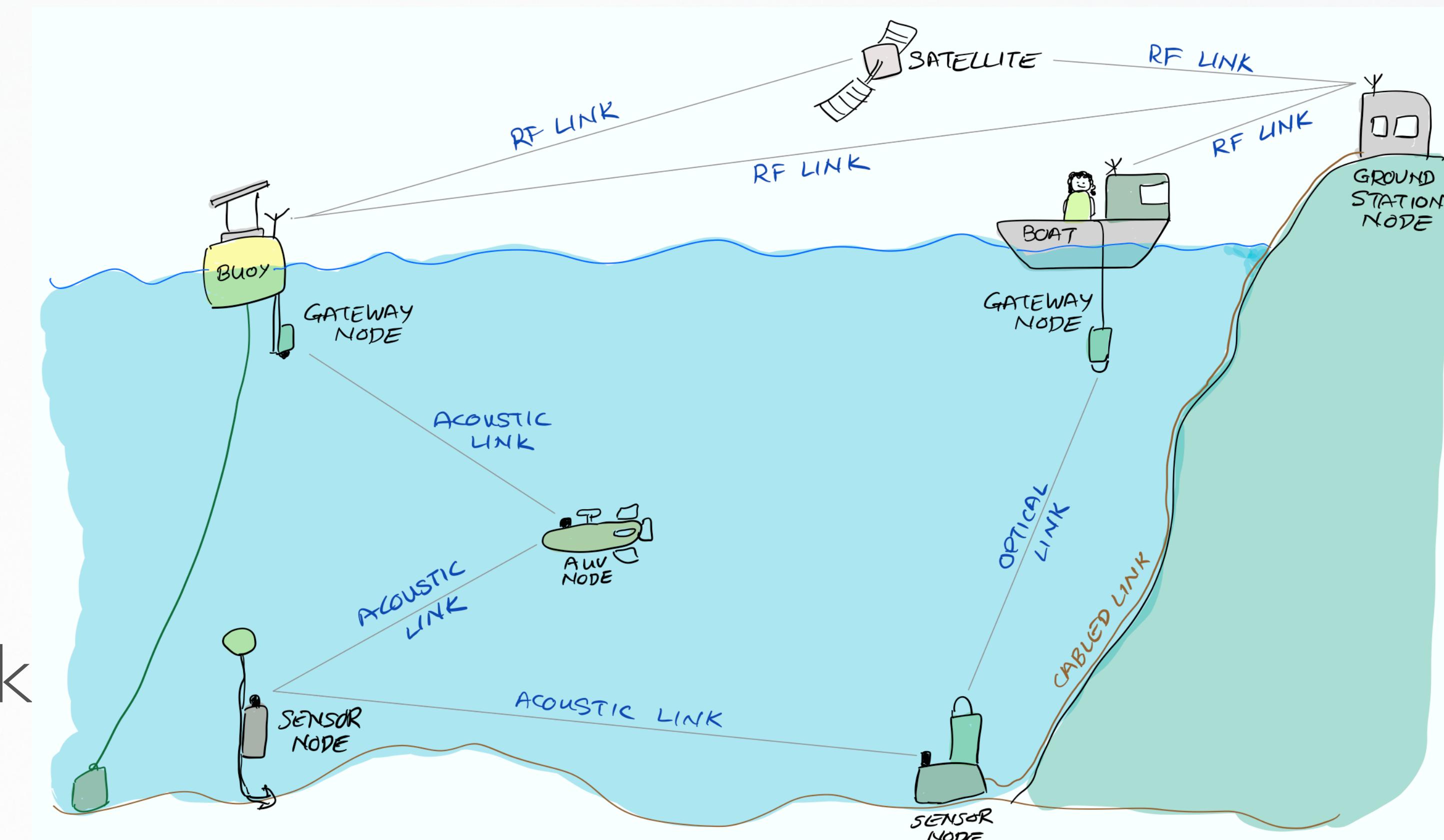
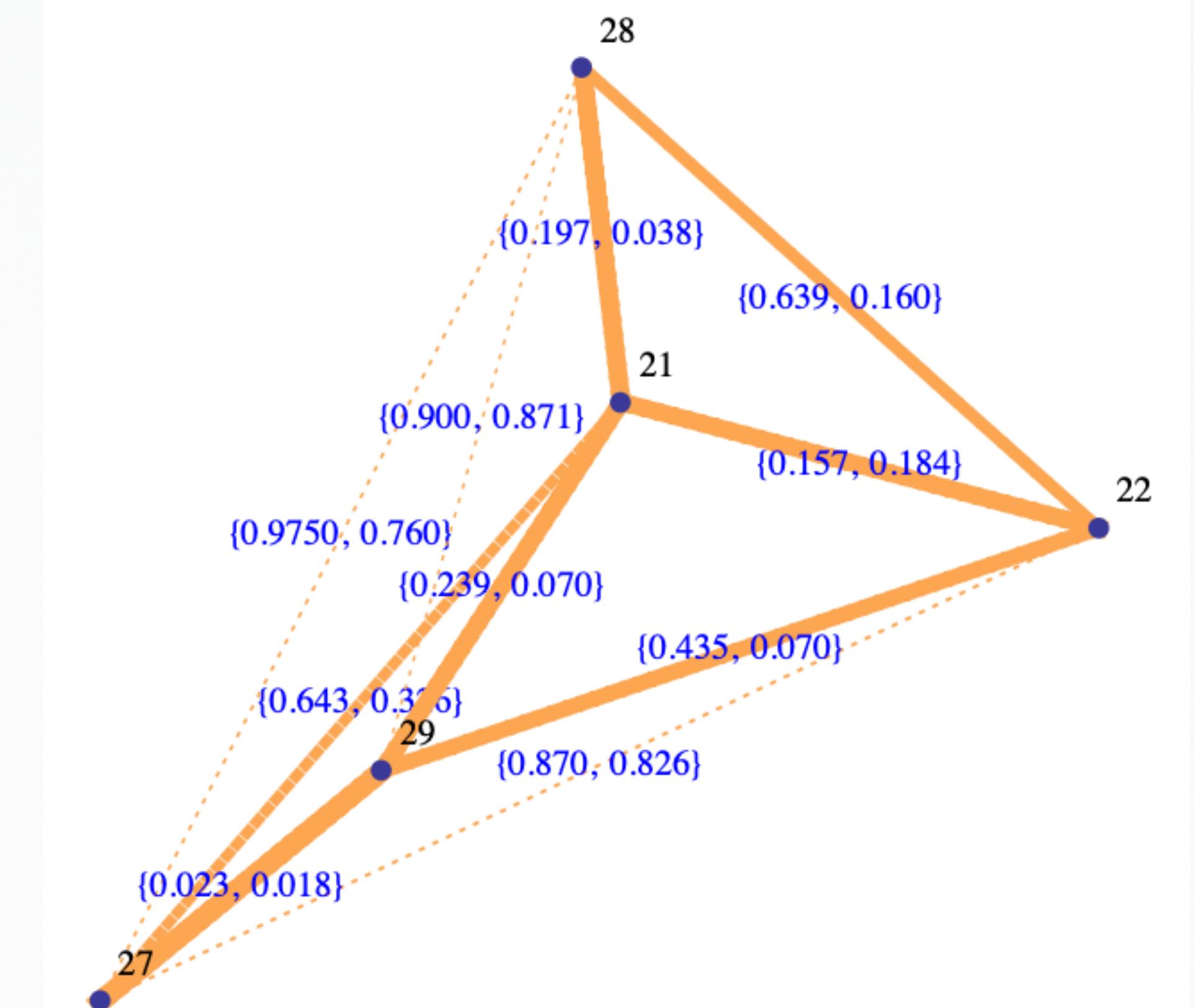


PART 3 - MULTI-HOP LINKS

- Heterogenous links
- Routing essential
- Simulated multi-hop network

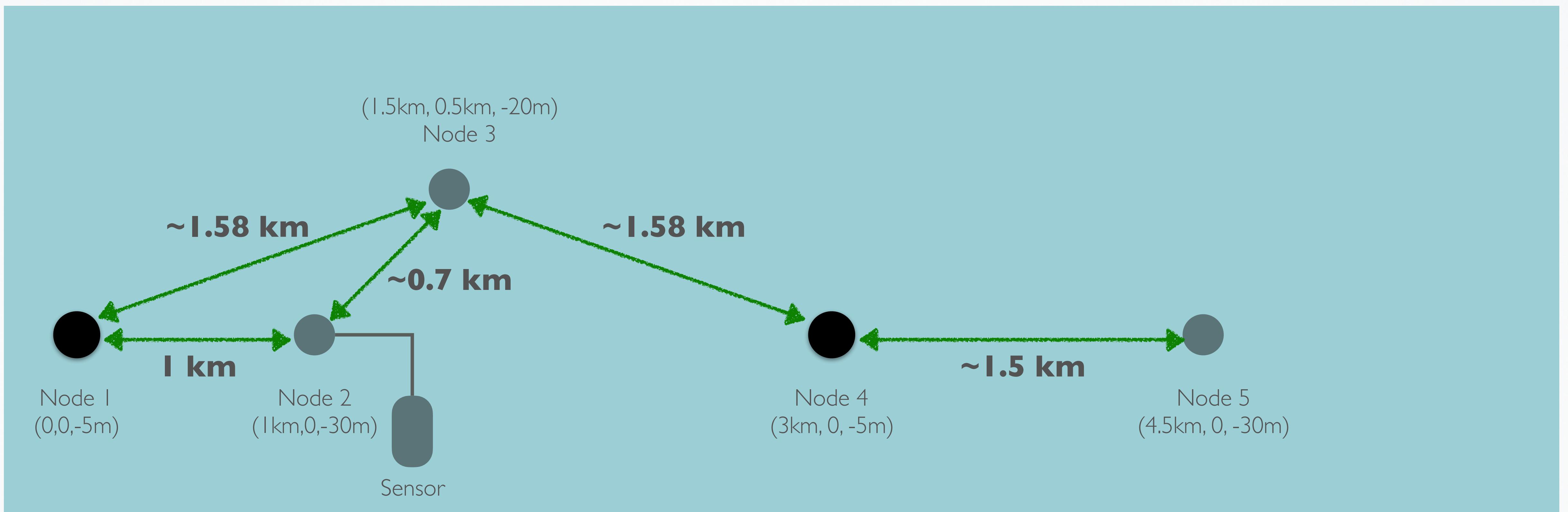


MULTI-HOP NETWORK - FROM SEA TRIAL



Credit: Chitre M, Topor I, Bhatnagar R, Pallayil V. Variability in link performance of an underwater acoustic network. In 2013 MTS/IEEE OCEANS-Bergen 2013 Jun 10 (pp. 1-7). IEEE.

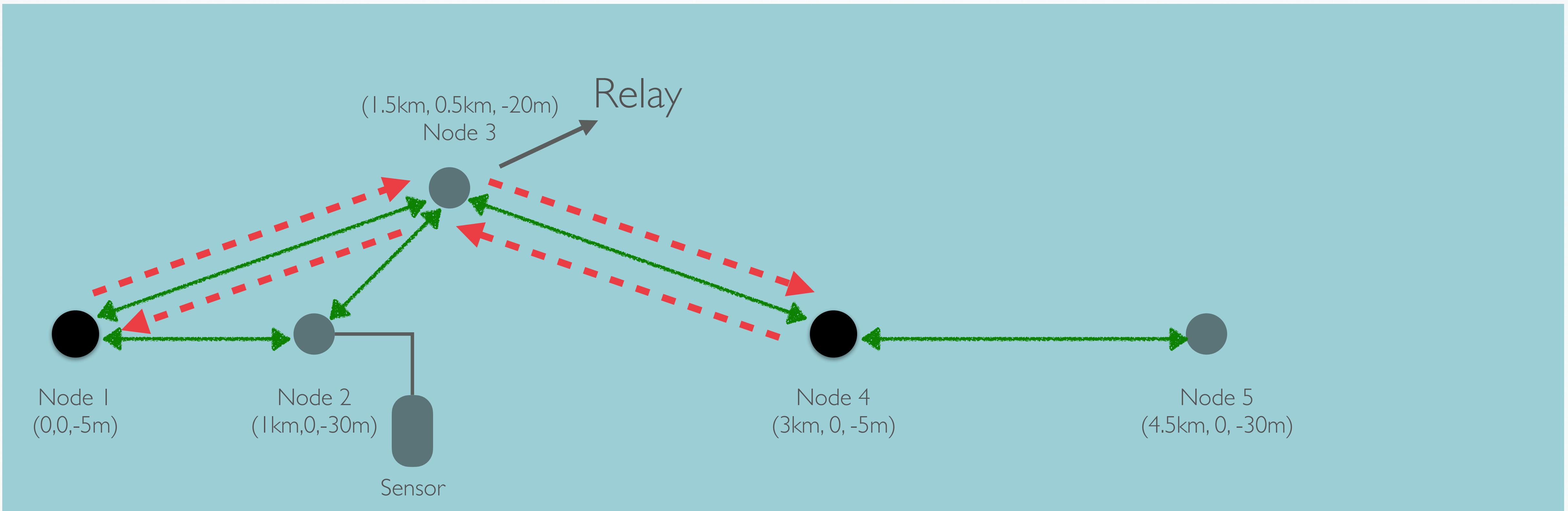
MULTI-HOP NETWORK - LET'S SIMULATE



A faint, grayscale network graph serves as the background for the title. It consists of numerous small, dark gray dots representing nodes, connected by a dense web of thin, light gray arrows pointing in various directions, suggesting a complex system of interactions or data flow.

DEMO 3.I

ADDING ROUTE IN THE NETWORK



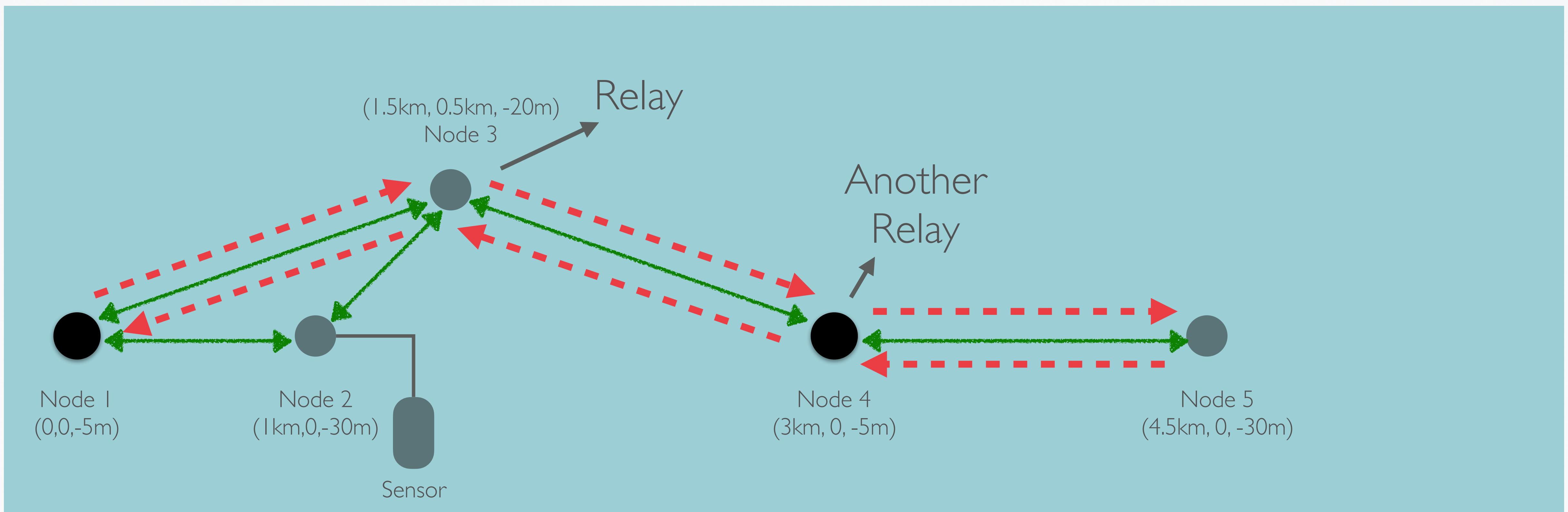
No direct link between Node 1 and Node 4

Let's add a route between these nodes

A faint, grayscale network graph serves as the background for the title. It consists of numerous small, dark gray dots representing nodes, connected by a dense web of thin, light gray arrows pointing in various directions, suggesting a complex system of interactions or data flow.

DEMO 3.2

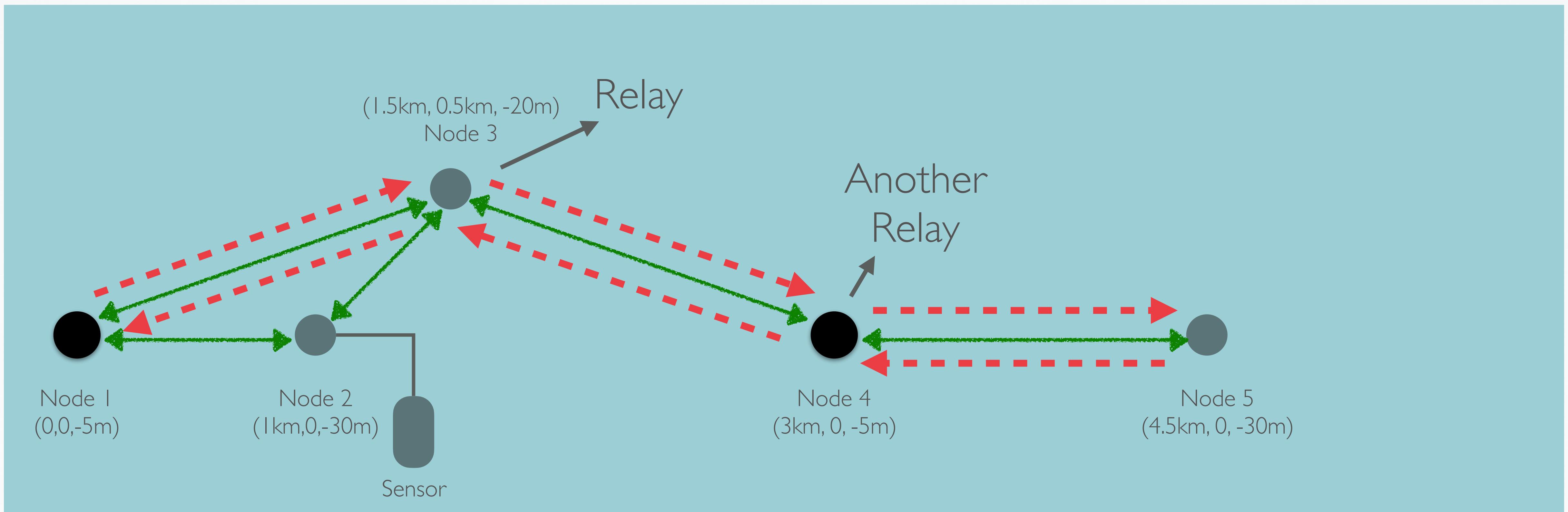
ADDING ROUTE IN THE NETWORK



No direct link between Node 1 and Node 5

Let's add a route between these nodes

ADDING ROUTE REMOTELY



Do not have access to Node 3 and Node 5

Can we add routes remotely from nodes that we have access to ?

The background of the image is a light gray color with a faint, semi-transparent network graph overlay. The graph consists of numerous small, dark gray dots representing nodes, connected by thin, dark gray arrows pointing in various directions, suggesting a complex system of interactions or data flow.

DEMO 3.3

HANDS ON SESSION 3

- Try out Demo 3.1 and 3.2 and 3.3 using UnetStack
- Ask questions in the chat
- <http://subnero.com/oceans20>



NEXT...

- Part 4 : Check out the next session on “Sensors and The Internet”

Visit <http://subnero.com/oceans20> for slides, code examples and other resources from this tutorial